

CLAIMS

What is claimed is:

1. A panoramic display system, comprising:
 - a) a curved projection screen, having a center of curvature and a bottom;
 - b) a panoramic projector, configured to project an image onto the projection screen from a projection point located substantially above the projection screen; and
 - c) a substantially conically shaped barrier, having a base disposed toward the bottom of the projection screen, and an apex region disposed toward the projection point, configured to block reflections from a region of the screen to at least one other region of the screen.
- 5 2. A device in accordance with claim 1, further comprising an anti-reflective treatment disposed on the conically shaped barrier.
- 10 3. A device in accordance with claim 2, wherein the anti-reflective treatment is selected from the group consisting of anti-reflective coatings, baffles, and optical felt.
- 15 4. A device in accordance with claim 1, wherein the base of the barrier is coterminous with the bottom of the screen.
- 20 5. A device in accordance with claim 1, wherein the panoramic screen includes a vertical axis of curvature that is parallel to a vertical axis of the conically shaped barrier.
- 25 6. A device in accordance with claim 5, wherein the vertical axis of the conically shaped barrier is collinear with the vertical axis of the screen.
- 30 7. A device in accordance with claim 1, wherein the projector comprises multiple projectors disposed near the projection point, configured to project a composite image upon the screen.
8. A device in accordance with claim 1, wherein the projector comprises:
 - a) a linear array projector, configured to project a vertical line of pixels at a refresh rate; and

b) a rotating scanning mirror, disposed substantially at the projection point, configured to rotate about a vertical axis at one half the refresh rate of the linear array projector, and to reflect the vertical line of pixels onto the screen.

5 9. A device in accordance with claim 8, wherein the projector further comprises a folding mirror, disposed between the linear array projector and the scanning mirror, configured to reflect the vertical line of pixels onto the scanning mirror.

10 10. A device in accordance with claim 8, wherein the panoramic screen includes a vertical axis of curvature that is parallel to a vertical axis of the conically shaped barrier and parallel to the vertical axis of the scanning mirror.

15 11. A device in accordance with claim 1, wherein the screen is a rear-projection screen

12. A device in accordance with claim 11, further comprising a curved mirror, configured to reflect a panoramic image from the screen to an offset viewing point.

13. A device in accordance with claim 1, wherein the screen is doubly curved.

20 14. A device in accordance with claim 1, wherein the projector comprises:

a) a linear array projector, configured to project a vertical line of pixels at a refresh rate; and

25 b) a rotating scanning mirror, disposed substantially at the projection point, configured to rotate about a vertical axis at one half the refresh rate of the linear array projector, and to reflect the vertical line of pixels onto the screen.

15. A device in accordance with claim 1, wherein the curved projection screen defines an arc of greater than 180° and less than 360°, and further comprising a baffle, extending between a rearward edge of the screen and the reflection barrier, configured to block reflections between rearward portions of the screen.

30 16. A reflection barrier for a panoramic projection system, the system including a curved projection screen, having a center of curvature and a bottom, and a panoramic

projector, configured to project an image onto the projection screen from a projection point located substantially above the projection screen, the barrier comprising:

5 a) a substantially conically shaped barrier, having a base disposed toward the bottom of the projection screen, and an apex region disposed toward the projection point, configured to block reflections from a region of the screen to at least one other region of the screen.

17. A device in accordance with claim 16, further comprising an anti-reflective treatment disposed on the conically shaped barrier.

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18. A device in accordance with claim 17, wherein the anti-reflective treatment is selected from the group consisting of anti-reflective coatings, baffles, and optical felt.

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19. A device in accordance with claim 16, wherein the projector comprises multiple projectors disposed near the projection point, configured to project a composite image upon the screen.

20. A device in accordance with claim 16, wherein the base of the barrier is coterminous with the bottom of the screen.

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21. A device in accordance with claim 16, wherein the panoramic screen includes a vertical axis of curvature that is parallel to a vertical axis of the conically shaped barrier.

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22. A device in accordance with claim 21, wherein the vertical axis of the conically shaped barrier is collinear with the vertical axis of the screen.

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23. A device in accordance with claim 16, wherein the curved projection screen defines an arc of greater than 180° and less than 360°, and further comprising a baffle, extending between a rearward edge of the screen and the reflection barrier, configured to block reflections between rearward portions of the screen.

24. A panoramic display system, comprising:

a) a curved projection screen, having a bottom and a center of curvature;
b) a projection point, located substantially above the projection screen;

c) a panoramic projector, configured to project an image onto the projection screen, the projector including:

- i) a linear array projector configured to project a vertical line of pixels at a refresh rate; and
- 5 ii) a rotating scanning mirror, disposed substantially at the projection point, configured to rotate about a vertical axis at one half the refresh rate of the linear array projector, and to reflect the vertical line of pixels onto the screen; and

d) a substantially conically shaped barrier, having a base disposed toward the bottom of the projection screen, an apex region disposed toward the projection point, and a vertical axis that is substantially collinear with the center of curvature of the screen, the barrier being configured to substantially block reflections from a region of the screen to at least one other region of the screen.

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